

REMARKS/ARGUMENTS

Favorable reconsideration of this application, as presently amended, and in light of the following discussion, is respectfully requested.

After entry of the foregoing amendment, Claims 1-21 remain pending in the present application. Claims 1, 4, 7, 8, 10, 13, 15 and 20 are amended to address cosmetic matters of form, and to clarify previously recited features. No new matter has been added.

By way of summary, the Official Action presents the following issues: Claim 17 is objected to as including an improper claim identifier; Claims 1-3 and 5-6 stand rejected under 35 U.S.C. §102 as being unpatentable over Gan et al. (U.S. Patent Publication No. 2002/0136268, hereinafter Gan); Claim 4 stands rejected under 35 U.S.C. §103 as being unpatentable over Gan in view of Bender et al. (U.S. Patent Publication No. 2003/0012174, hereinafter Bender); Claims 7-8 stand rejected under 35 U.S.C. §103 as being unpatentable over Gan in view of Ma et al. (U.S. Patent Publication No. 2003/0072255, hereinafter Ma); Claims 9, 13-14 and 17-18 stand rejected under 35 U.S.C. §103 as being unpatentable over Gan in view of Yamaura et al. (U.S. Patent Publication No. 2003/0224731, hereinafter Yamaura); Claims 10-12 stand rejected under 35 U.S.C. §103 as being unpatentable over Yamuara in view Gan; Claims 16 and 21 stand rejected under 35 U.S.C. §103 as being unpatentable over Gan and Yamaura in further view of Terrier (U.S. Patent Publication No. 2004/0179485, hereinafter Terrier); and Claims 19-20 stand rejected under 35 U.S.C. §103 as being unpatentable over Gan, Yamaura and Ma.

CLAIM OBJECTIONS

In response to the objection of Claim 17 outlined at paragraph 5 of the Official Action, the claim identifier has been updated accordingly.

As such, Applicants respectfully request that the objection to Claim 17 be withdrawn.

REJECTION UNDER 35 U.S.C. §102

The Official Action has rejected Claims 1-3 and 5-6 under 35 U.S.C. §102 as being unpatentable over Gan. The Official Action contends that Gan describes all of the Applicants claimed features. Applicants respectfully traverse the rejection.

Applicants amended Claim 1 recites, *inter alia*, a transmitter for use with a multi-channel radio communication system, transmitting a radio frame to a receiver through available channels of the multi-channel communication system, including:

a transmission media-access-control (MAC) unit that divides, when the transmitter transmits data using two or more channels of the multi-channel radio communication system, the data into the two or more channels, and generates transmission data in correspondence to each of the two or more channels in divided fashion;

a radio-frame generating unit that generates a radio frame in correspondence to each of the two or more channels; and

a transmission applying-channel notifying unit that inserts channel information to each one of the two or more channels to identify a respective channel of each radio frame, wherein the transmitter transmits each radio frame containing the channel information. (emphasis added)

Gan describes a system for periodically updating channels of a communication system utilizing a hopping protocol. For example, as shown in Figure 1b at step (132) a set of communication channels are selected by a master device (210) as shown in Figure 2. Slave devices (220-230) receive corresponding channel identification relative to the selected channels of the master for conducting subsequent data communication. As shown in Figure 4, the selected channels are communicated via a “good packet” (400) prior to performing data communication.¹ The good packet may include the specified time in which participants are

¹ See Gan at paragraph 140-143.

to begin using the selected channels.² Likewise, the slave terminals may utilize a good channel usage time out (GCUT) to discontinue usage to selected channels.³

Conversely, in an exemplary embodiment of the Applicants claimed advancements, a transmission media access control unit (MAC) operates at the link layer to divide data among two or more channels of a multi-channel radio communications system. A radio frame is generated in correspondence to each one of the two or more channels, each of which includes channel information to identify a respective channel of each radio frame.

As can be appreciated, Gan is directed toward a communications system utilizing a hopping protocol. Thus, in operation, data is provided to a current channel for transmission until such time that the next channel becomes active (i.e., “hop”). Thus, Gan does not describe a multi-channel communication system in which data is divided among two or more channels for transmission. Additionally, the Applicants claims require that channel information be inserted to each radio frame of the two or more channels to identify respective channels of each frame. The good channel packet (400) of Gan is communicated prior to any data communication, and identifies a set of communication channels to be used upon subsequent data communication. The good packet of Gan does not identify radio frames of transmission data relative to a corresponding transmission channel.

Moreover, to the extent that the distinctions recited above are analyzed in view of Gan under 35 U.S.C. §103, it is noted that Gan could not disclose or suggest such features as Gan explicitly provides for timing information and “time outs” by which selected channels are no longer considered valid. On the other hand, if Gan implemented the claimed features discussed above, no such timing or time out features would be necessary as the channel information would be explicitly provided with each radio frame.

² See Gan at paragraph 141.

³ See Gan at paragraph 160.

Additionally, to the extent that the Office intends to continue to rely upon the inherency analysis provided in the last Office Action, Applicants remind the Office that Under 35 U.S.C. § 102, every limitation of a claim must identically appear in a single prior art reference for it to anticipate the claim. In Re Bond, 15 USPQ 2d 1566, 1567 (Fed. Cir. 1990). To this end, the Official Action states that it is inherent that Gan describes “the channel information could be inserted into each frame and transmitted.” As such, the inherency assertion of the Official Action can only be based upon speculation, as in fact Gan, does not demonstrate that inserting channel information into each radio frame of two or more channels of a multi-channel communication system as presently recited in Claim 1. Moreover, the fact that a certain result or characteristic may occur or be present in the prior art is not sufficient to establish the inherency of the result or characteristic. In Re Rigckart, 28 USPQ 2d, 1955 (Fed. Cir. 1993) (See MPEP § 2112). To this end, “[i]n relying upon the theory of inherency, the Examiner must provide a basis in fact and/or technical reasoning to reasonably support the determination that the allegedly inherent characteristic necessarily flows from the teachings of the applied prior art.” In Re Levy, 17 USPQ 2d 1461, 1464 (B.O.P.A. 1990) (MPEP § 2112). The Official Action provides no such factual basis or technical reasoning.

Furthermore, with respect to dependent Claim 2, Applicants note that this claim requires that the channel information be inserted into an unused area of transmission data generated by the transmission media/access control unit. In rejecting this claim, the Office has identified Figure 4 of Gan and paragraphs 140, 142-146 as the cited portions of Gan merely describe the good packet channel (400) it is unclear how the Office is interpreting “unused area” as recited in Claim 2. As the good channel packet (400) of Gan appears to be a special packet created for the sole purpose of providing selected channel information, it does not appear that this is an unused area of transmission data. In fact, as the good channel

packet is provided before any data communication is conducted, the good channel packet cannot be an unused area of transmission data as recited in Claim 2.

With respect to dependent Claim 3, this claim requires that the channel information be inserted into a preamble of a radio frame. In rejecting this claim, the Office identifies Figure 4, paragraph 97 and paragraphs 110-111 of Gan as teaching channel information within a preamble. Applicants respectfully point out that Claim 3 does not merely recite inserting information into a generic preamble, but instead, to a preamble of a radio frame in accordance with the features of the base claim. As such, Gan does not disclose or suggest the preamble recited in Claim 3.

With respect to Claim 5, Applicants note that this claim requires that transmission data contained within the radio frame is encoded, including the channel information. In rejecting this claim, the Office identifies Figure 4 and paragraphs 142-146 of Gan. Applicants note that although the good channel packet (400) includes a payload section, this is not a radio frame in accordance with the Applicants claims nor does it include channel information in accordance with the Applicants Claim 5.

Accordingly, Applicants respectfully request that the rejection of Claims 1-3 and 5-6 under 35 U.S.C. §102 be withdrawn.

REJECTION UNDER 35 U.S.C. §103

The Official Action has rejected Claims 4 and 7-21 under 35 U.S.C. §103 as being unpatentable over Gan in view of the plurality of other references. Applicants respectfully traverse the rejection.

As outlined above, Gan does not disclose or suggest the features of the Applicants amended claims for which it has been asserted. As none of the additional references, either

alone, or in combination with Gan remedy the deficiencies discussed above, Applicants respectfully submit that a *prima facie* case of obviousness has not been presented.

Accordingly, Applicants respectfully request that the rejection of Claims 4 and 7-21 under 35 U.S.C. §103 be withdrawn.

CONCLUSION

Consequently, in view of the foregoing amendment and remarks, it is respectfully submitted that the present application, is in condition for allowance, and such action is respectfully requested at an early date.

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